

Calendar

Tuesday, January 18

3:30 p.m. DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

THERE WILL BE NO ACCELERATOR PHYSICS AND TECHNOLOGY SEMINAR TODAY

Wednesday, January 19

11:00 a.m. Fermilab ILC R&D Meeting - 1 West

Speaker: P. Piot, Fermilab

Title: e^-/e^+ Injector Issues for the ILC

2:30 p.m. Proton Driver General Meeting - 1 West

Speaker: W. Foster, Fermilab

Title: Proton Driver Main Linac

Parameter Optimization

Speaker: S. Brice, Fermilab

Title: Neutrino Oscillation Working Group Summary

3:30 p.m. DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

4:00 p.m. Fermilab Colloquium - 1 West

Speaker: D. Kleppner, Massachusetts Institute of Technology

Title: How Physics Got Precise

Wilson Hall Cafe

Tuesday, January 18

Creamy Turkey Vegetable Soup

Popcorn Shrimp Hoagie \$4.75

Salisbury Steaks w/ Mushroom Au Jus \$3.75

Chicken Cacciatore \$3.75

Smoked Turkey Breast on Homemade Focaccia \$4.75

Philly Cheese Stromboli \$3.25

Chipotle Chili & Queso Nachos

Supreme \$4.75

Site Security Plan to Change January 24



Fermilab map showing the public areas on site. (Click on image for larger version.)

The Department of Energy has recently [approved changes](#) to the Fermilab Security Plan. These changes, which will go into effect on January 24, 2005, will ease some of the site access restrictions that have been in place since 9/11 while at the same time enhancing the overall security of the Fermilab site.

The most visible of the changes will mean that members of the public will be able to enter the site by car from either the east or west gates without the need for visitors' passes. A central corridor of public areas will enable the public to visit much of the Fermilab site, including most of the recreational features of the site. The public areas will be open to the visiting public from 8 a.m. to 6 p.m. from mid-October to mid-April and from 8 a.m. to 8 p.m.

Director's Corner

Good Morning!

Records fell across the accelerator complex in the last week. Yesterday the initial luminosity for store #3925 was $1.05 \times 10^{32} \text{ cm}^{-2}\text{s}^{-1}$. A new record rate for stacking antiprotons helped fuel that luminosity.



Mike Witherell

There were 145 hours of luminosity in the Tevatron last week without a single unplanned termination of a store. This remarkable reliability led to an integrated luminosity of about 15 pb^{-1} for the week, the third best ever.

The MiniBooNE beam also had a great week, with a record number of protons on target, 1.06×10^{18} .

The accelerators are operating this well only six weeks after a 3-month shutdown in which major work was done on every accelerator. This rapid return to peak performance results from the careful organization of both the shutdown work and the operations effort since then.

The next big step for the accelerators will be the startup and commissioning of the NuMI beam line, a process that will start next week.

Accelerator Update

[Wilson Hall Cafe Menu](#)

[Chez Leon](#) will be closed through January and February

Weather



Breezy 22°/22°

[Extended Forecast](#)

[Weather at Fermilab](#)

Current Security Status

[Secon Level 3](#)

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when daylight hours are longer.

Roadways that are off limits to visiting members of the public will be posted with signs, and motorists will be given site maps to guide them to the public areas.

The public areas will extend into the Lederman Science Center and to the ground floor and atrium of Wilson Hall, and Ramsey Auditorium. Signs will tell visitors which areas of Wilson Hall are open to the public.

"While we have planned carefully for implementing the changes I have outlined, there will doubtless be a learning curve as we put them into effect," said Fermilab Director Michael Witherell. "With your patience and cooperation, I believe that these changes will make our site more welcoming to our neighbors and other visitors without compromising Fermilab's security."

Colloquium: Kleppner Charts 'How Physics Got Precise'

To Professor Daniel Kleppner, one 19th century development marked the turning point in the precision of physics.

"For me, the breakthrough was the invention of the Michelson Interferometer by A.A. Michelson in 1883," says Kleppner, the Lester Wolfe Professor of

Physics at MIT. "The interferometer made it possible to measure distances to a small fraction of the wavelength of



January 12-January 14

- During this 48 hour period, Operations established one store that, combined with an existing store, supplied the experiments with approximately 41 hours and 21 minutes of luminosity.

- A TeV BLM software problem held up shot setup

- A beam problem caused some CDF SVX crates to trip off

- A Booster kicker problem held off stacking

- A MI-60 VCB flash-over shutdown MI at 10 PM on Thursday night

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

In the News

From *Computerworld Australia*, January 19, 2005

Guarding the grid

by Jaikumar Vijayan

Deploying a grid infrastructure can help companies dramatically improve hardware utilization rates and boost computing power. But the massive resource aggregation and wider end-user access enabled by grids also have the potential to magnify security risks, implementers say.

...The potential severity of grid-related security problems depends largely on the context in which grids are being used, says Dane Skow, deputy computer security executive at the Fermi National Accelerator Laboratory. "When you talk to people about grids, they have different scenarios in mind -- everything from clusters in the same room run by the same infrastructure

light. Since a meter [Daniel Kleppner](#) typically has a million wavelengths, the resulting precision is enormous."

Kleppner examines the evolution of precision measurements, from the King's thumb to the atomic clock and beyond, in "How Physics Got Precise," the Fermilab Colloquium presentation on Wednesday, January 19 at 4 p.m. in Wilson Hall's 1 West conference room. Kleppner sets the stage with the impressive accuracy of time measurement in early civilizations.

"The Babylonians, about 7000 B.C., and Hipparchus in Egypt, about 150 B.C., knew the length of the year to about 5 minutes," Kleppner says. "The length was found by telling the time of the day of the equinoxes over a long time. If you estimate it to one hour, which is pretty easy, and keep count of the days between equinoxes for twelve years, you have the length of the year to five minutes. Tycho Brahe, in 1600, knew the length of the year to about three seconds."

Kleppner also offers another surprise for post-modern time measurement, involving the re-introduction of human-made or human-related "artifacts."

"For a new generation of atomic clocks," he says, "time keeping could be so precise that the effects of the local gravitational potentials on the clock rates would be important. This would force us to re-introduce an artifact into the definition of the second-specifically, the location of the primary clock."

[Read more](#)

team to global power-grid-like infrastructures," Skow says.

[read more](#)

Announcements

Scottish Country Dancing

Scottish Country Dancing will be held at 7:30 p.m., Tuesday, January 18, at the Geneva American Legion Post. Info at 630-584-0825 or 630-840-8194 or folkdance@fnal.gov.

Travel Center Tour Deadlines

The deadline to sign up for the "Wonders of Iceland - August 17" tour is February 17. Registration is accepted after this date if there are seats. If you would like more information on these tours contact the Recreation Office.

[more information](#)

Smuckers Stars on Ice \$10-off Discount Tickets

This one-night show will run on Saturday, February 5, 2005 at 7:30 p.m. at the Allstate Arena. Order forms can be found in the Recreation Office or the [Recreation Web page](#). Deadline to order is January 19th at noon.

[Upcoming Activities](#)

